Open Standards, Open Source, Open Futures

How Openness is shaking up the Cloud Computing landscape

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Why Open Source and Cloud Computing

- User-Driven context from solving real problems
- Lower Barrier to participation
- Larger user base, users helping users
- Rapid release cycles stay current with the state-of-the-art
- Open Source innovating faster than commercial
- Open Data, Open Standards, Open APIs
These New Demands Are Forcing a Shift in Application Design

Application demands are becoming more complex

IMMEDIATE

PERVASIVE

AWARE

Application requirements are becoming more diverse

CLOUD
MOBILE
INTERNET OF THINGS
BIG DATA
AUTOMATION
ABSTRACTION
Why are standards so important?

Open standards avoid fragmentation, accelerate innovation and increase interoperability in customer environments.

At Red Hat, we drive standards through the technology development in the relevant open source projects.

The container space has been growing so quickly, that the need for standards for interoperability across platforms and clouds became apparent.
Characteristics of Cloud
1. On-Demand self service
2. Broad Network Access
3. Resource Pooling
4. Rapid Elasticity
5. Measured Service

... Making it Open
1. Architectural Control
2. Freedom to Move
3. Application & License Portability
4. Access to Management Interfaces
5. No Lock in
Deployment Models: Public, Private & Hybrid

- Public Cloud
- Hybrid Cloud
- Virtual Private Cloud
- Private Cloud
- Enterprise IT User
OpenStack: Framework for the Cloud

- Modular architecture
- Designed to easily scale out
- Based on (growing) set of core services
Cloud Architecture

- Service Models
  - SaaS
  - PaaS
  - IaaS

- Virtualised Resources
  - Operating System, Hypervisor

- Physical Resources

Management
- Capacity Planning
- Billing/Chargeback
- SLA Management
- Patching/Provisioning
- Configuration
- Monitoring
- Security
- Accounting
Open Standards are Essential for the Cloud

**Open Virtualization Format (OVF)**

Standard packaging format for software solutions based on virtual systems. An open standard for packaging and distributing virtual appliances or more generally software to be run in virtual machines.

**Why do we need one?** – VMWare, KVM, Xen & HyperV all have their own.

**Open Container Initiative (OCI)**

A Common, minimal, Open Standard and specification for Container Technology, Support Containers being portable and composable for applications, Standardise how containers are orchestrated and where registries are placed.

**Why do we need one?** – A standard allowing allowing containers to be deployed across all major operating systems and platforms without technical limitations.
APPLICATION DELIVERY VIA CONTAINERS

- Increases business agility
- Accelerates developer productivity
- Scales to public cloud faster
Open Future

Firewall
Compute
Network
Data

Application Aware
- Load
- Cost
- Resources
- Location ?
- Device ?
Open Source
Open Standards
Open Futures
THANK YOU